

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 02 March 2000 (02.03.00)	
International application No. PCT/SE99/00950	Applicant's or agent's file reference 110520 BER
International filing date (day/month/year) 01 June 1999 (01.06.99)	Priority date (day/month/year) 02 June 1998 (02.06.98)
Applicant NORDIN, Rudolf	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

03 January 2000 (03.01.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Claudio Borton Telephone No.: (41-22) 338.83.38
---	--

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

10

Applicant's or agent's file reference Le A 33 030-PC Ba	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP99/03739	International filing date (day/month/year) 29 May 1999 (29.05.99)	Priority date (day/month/year) 10 June 1998 (10.06.98)
International Patent Classification (IPC) or national classification and IPC A01N 47/44		
Applicant BAYER AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 03 November 1999 (03.11.99)	Date of completion of this report 25 July 2000 (25.07.2000)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP99/03739

I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☐ the international application as originally filed.
- ☒ the description, pages 1-75, as originally filed,
 pages _____, filed with the demand,
 pages _____, filed with the letter of _____,
 pages _____, filed with the letter of _____.
- ☒ the claims, Nos. 1-5, as originally filed,
 Nos. _____, as amended under Article 19,
 Nos. _____, filed with the demand,
 Nos. _____, filed with the letter of _____,
 Nos. _____, filed with the letter of _____.
- ☐ the drawings, sheets/fig _____, as originally filed,
 sheets/fig _____, filed with the demand,
 sheets/fig _____, filed with the letter of _____,
 sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP99/03739

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

See supplemental sheet.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 99/03739

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV.3

The subject matter of Claim 1 is already known and is not inventive (see Box V for the reasons for this objection). The requisite unity of invention (PCT Rule 13.1) is not established in that there is no technical connection under PCT Rule 13.2 between the members of the groups of possible fungicides (cf. the description and the different possible classes of fungicide indicated therein) involving one or more of the same or corresponding special technical features.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 99/03739

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims		YES
	Claims	1-5	NO
Inventive step (IS)	Claims		YES
	Claims	1-5	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims		NO

2. Citations and explanations

The application concerns mediums containing the compound of the formula (I) mixed with fungicidal agents, excluding cyclopropylcarboxamide derivatives and azolylmethylcycloalkanes. The mediums are used to control fungi and insects.

Reference is made to the following documents:

- D1: DATABASE CAPLUS [Online] Accession No. 1993:228245, Document No. 118:228245, Nippon Soda Co.:
'Synergistic agrochemical pesticide compositions containing amines and ergosterol biosynthesis inhibitors' XP002900600 & JP-A-05 017 311, 26 January 1993 (1993-01-26)
- D2: DATABASE CAPLUS [Online] Accession No. 1992:607190, Document No. 117:207190, Takeda Yakuhin Kogyo K.K.:
'Insecticidal and fungicidal compositions containing guanidines' XP002900601 & JP-A-04 108704
- D3: WO-A-96/03045 (BAYER AG) 8 February 1996 (1996-02-08)
- D4: WO-A-97/24032 (BAYER AG) 10 July 1997 (1997-07-10)
- D5: DATABASE CAPLUS [Online] Accession No. 1993:488888, Document No. 119:88888, Takeda Chemical Industries, Ltd.: 'Agrochemical compositions containing

condensed heterocycle-containing amides and other active ingredients' XP002900602 & JP-A-05 039 205, 19 February 1930 (1930-02-19)

- D6: DATABASE CAPLUS [Online] Accession No. 1992:545353, Document No. 117:145353, Takeda Chemical Industries, Ltd.: 'Synergistic insecticide compositions containing guanidines and organophosphates' XP002900603 & JP-A-04 112 805, 14 April 1992 (1992-04-14)
- D7: DATABASE CAPLUS [Online] Accession No. 1992:545352, Document No. 117:145352, Takeda Chemical Industries, Ltd.: 'Synergistic insecticide compositions containing guanidines and carbamates' XP002900604 & JP-A-04 112 804, 14 April 1992 (1992-04-14)
- D8: DATABASE CAPLUS [Online] Accession No. 1992:526474, Document No. 117:126474, Takeda Chemical Industries, Ltd.: 'Synergistic insecticides containing guanidine derivatives' XP002900605 & JP-A-04 120 007, 21 April 1992 (1992-04-21).

i. Novelty (PCT Article 33(2))

Synergistic fungicidal compositions containing the compound of the formula (I) as per the present application and other fungicidal agents are disclosed in the following documents: D1, D2, D5, D6, D7 and D8. The subject matter of Claims 1-5 is not novel over these disclosures.

ii. Inventive step (PCT Article 33(3))

Furthermore, the subject matter of the application is described in generic terms in the prior art - cf. D1: generic disclosure of the compound (I) in combination with EBIs; D2: (I) + ferimzone,

phthalide, probenazole, isoprothiolane, kasugamycin, edifenphos, ibrobenfos, tricyclazole, validamycin A, flutolanil, mepronil and pencycuron; D3: the same disclosure as the present application, but in a generic form; D4: an insecticidal mixture of fipronil and nicotinic acetylcholine receptor (ant)agonists - a preferred compound is the compound (IIh); D5: compound of the formula (I) with compounds of the formula $QCONHCHXY$; D6: compound of the formula (I) with organophosphate compounds of the formula $R_4OP(=Y_1)(R_5)(Y_2R_6)$; D7: compound of the formula (I) with carbamate compounds of the formula $R_4O_2C-NR_5R_6$, and D8: compound of the formula (I) with benzoylurea compounds, cartap and related compounds, namely thiadiazine.

Consequently, the subject matter of Claims 1-5 cannot be considered inventive.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 99/03739

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Contrary to PCT Rule 5.1(a)(ii), the description does not cite D1 to D8 or indicate the relevant prior art disclosed therein.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 99/03739

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The wording of Claim 1 is very broad and speculative. It has not been shown plausibly that all of the fungicide combinations covered by the claim have a synergistic effect.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 110520 BER	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/SE99/00950	International filing date (<i>day/month/year</i>) 01/06/1999	Priority date (<i>day/month/year</i>) 02/06/1998
International Patent Classification (IPC) or national classification and IPC A47L13/16		
Applicant ACT - ADVANCED CLEANING TECHNICS AB, et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 03/01/2000	Date of completion of this report 24. 08. 00.
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Papadimitriou, S Telephone No. +49 89 2399 2760 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/SE99/00950

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-5 as originally filed

Claims, No.:

1-3 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-3
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-3
Industrial applicability (IA)	Yes:	Claims	1-3
	No:	Claims	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/SE99/00950

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1) State of the art

Reference is made to the following documents:

D1: WO-A-96/10946 (cited in the description)

D2: DE-U-297 06 500

2) Independent claim 1

2.1) D1 discloses a dry-mop fabric 1 for attachment to a mop handle, cf. page 1, lines 10-11, designed to clean dry, soiled surfaces, cf. page 1, line 10; page 5, lines 29-31, the fabric being constituted of micro fibre or ultramicrofibre or filament, cf. page 4, lines 22-23, with a count of 0.3 Dtex, cf. page 4, lines 26-27, the fabric being woven with loops on one or both sides of the fabric, cf. page 2, lines 23-24; page 4, lines 11-12 and figure 1.

2.2) The dry-mop fabric specified in claim 1 differs from the one taught by D1 in that a loop height of 3-9 mm is specified. D1 teaches the use of long 3 and short 2 loops but is silent of a height range.

2.3) The objective problem underlying the present application can be regarded as the provision of a dry-mop fabric having an optimum filament loop height.

2.4) D2 discloses a textile cleaning and drying material, cf. page 4, lines 19-20, which may be constituted by micro fibres, cf. page 4, second paragraph, with a loop, cf. page 3, line 25, height of 1 to 5 mm, cf. page 4, lines 15-17.

In the light of the teachings of D2 and of the objective problem of providing an improved dry-mop fabric than the one taught by D1 it is considered standard design procedure for a skilled person to make the height of the "shorter" loops 2 of the dry-mop fabric of D1 to fall in the range specified in subsisting claim 1. Therefore, independent claim 1 does not comply with the provisions of Article 33(3) PCT.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/SE99/00950

3) Dependent claims 2 and 3

These dependent claims do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT), the reasons being as follows:

3.1) Claim 2: The subject-matter of this claim is taught by D1, cf. page 3, second paragraph.

3.2) Claim 3: The provision of a dry-mop fabric with filaments of a rectangular rather than a round x-section is standard design procedure.

Re Item VII

Certain defects in the international application

1) Description

1.1) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D2 is not mentioned in the description, nor is this document identified therein.

1.2) Document D1 should have been identified in line 31 of page 1 by its publication number WO-A-96/10946, not its application number.

RECOPIED COPY

PCT

REQUEST

The undersigned request that the present international application be processed according to the Patent Cooperation Treaty.

For Receiving Office use only

International Application No.

PCT/SE99/00950

International Filing Date

01-06-1999

The Swedish Patent Office
PCT International Application

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference 110520 BER
(if desired) (12 characters maximum)

Box No. I	TITLE OF INVENTION Cloth for a dry mop	
Box No. II	APPLICANT	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below.) ACT - Advanced Cleaning Technics AB Box 10 S-515 21 VISKAFFORS Sweden		<input type="checkbox"/> This person is also inventor. Telephone No. Facsimile No. Teleprinter No.
State (that is, country) of nationality: Sweden		State (that is, country) of residence: Sweden
This person is the applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box		
Box No. III	FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below.) ✓ <u>Rudolf NORDIN</u> Hyggesgatan 7 S-502 57 BORÅS Sweden		This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)
State (that is, country) of nationality: Sweden		State (that is, country) of residence: Sweden
This person is the applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box		
<input type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.		
Box No. IV	AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative		
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) ANDERSSON Per, BERGQUIST Gunnar, BURÖ Peter, GRAUDUMS Valdis, MOSSMARK Anders, ROMARE Anette, ROSANDER Bengt ALBIHNS PATENTBYRÅ GÖTEBORG AB, P.O. Box 142, S-401 22 GÖTEBORG, Sweden		Telephone No. +46 31 725 81 00 Facsimile No. +46 31 711 95 55 Teleprinter No.
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.		

corr
RO/SE

Box No. V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

Regional Patent

- ☒ **AP ARIPO Patent:** GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting state of the Harare Protocol and of the PCT
- ☒ **EA Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is Contracting State of the European Patent Convention and of the PCT
- ☒ **OA OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line).....

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|--|---|
| <input checked="" type="checkbox"/> AL Albania | <input checked="" type="checkbox"/> LS Lesotho..... |
| <input checked="" type="checkbox"/> AM Armenia | <input checked="" type="checkbox"/> LT Lithuania |
| <input checked="" type="checkbox"/> AT Austria | <input checked="" type="checkbox"/> LU Luxembourg |
| <input checked="" type="checkbox"/> AU Australia | <input checked="" type="checkbox"/> LV Latvia |
| <input checked="" type="checkbox"/> AZ Azerbaijan | <input checked="" type="checkbox"/> MD Republic of Moldova..... |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina | <input checked="" type="checkbox"/> MG Madagascar..... |
| <input checked="" type="checkbox"/> BB Barbados | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BG Bulgaria | <input checked="" type="checkbox"/> MN Mongolia |
| <input checked="" type="checkbox"/> BR Brazil | <input checked="" type="checkbox"/> MW Malawi |
| <input checked="" type="checkbox"/> BY Belarus | <input checked="" type="checkbox"/> MX Mexico |
| <input checked="" type="checkbox"/> CA Canada | <input checked="" type="checkbox"/> NO Norway |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> NZ New Zealand..... |
| <input checked="" type="checkbox"/> CN China | <input checked="" type="checkbox"/> PL Poland |
| <input checked="" type="checkbox"/> CU Cuba | <input checked="" type="checkbox"/> PT Portugal |
| <input checked="" type="checkbox"/> CZ Czech Republic | <input checked="" type="checkbox"/> RO Romania |
| <input checked="" type="checkbox"/> DE Germany | <input checked="" type="checkbox"/> RU Russian Federation..... |
| <input checked="" type="checkbox"/> DK Denmark | <input checked="" type="checkbox"/> SD Sudan |
| <input checked="" type="checkbox"/> EE Estonia | <input checked="" type="checkbox"/> SE Sweden |
| <input checked="" type="checkbox"/> ES Spain..... | <input checked="" type="checkbox"/> SG Singapore |
| <input checked="" type="checkbox"/> FI Finland..... | <input checked="" type="checkbox"/> SI Slovenia..... |
| <input checked="" type="checkbox"/> GB United Kingdom | <input checked="" type="checkbox"/> SK Slovakia..... |
| <input checked="" type="checkbox"/> GD Grenada | <input checked="" type="checkbox"/> SL Sierra Leone |
| <input checked="" type="checkbox"/> GE Georgia | <input checked="" type="checkbox"/> TJ Tajikistan..... |
| <input checked="" type="checkbox"/> GH Ghana | <input checked="" type="checkbox"/> TM Turkmenistan..... |
| <input checked="" type="checkbox"/> GM Gambia | <input checked="" type="checkbox"/> TR Turkey |
| <input checked="" type="checkbox"/> HR Croatia | <input checked="" type="checkbox"/> TT Trinidad and Tobago |
| <input checked="" type="checkbox"/> HU Hungary | <input checked="" type="checkbox"/> UA Ukraine..... |
| <input checked="" type="checkbox"/> ID Indonesia | <input checked="" type="checkbox"/> UG Uganda |
| <input checked="" type="checkbox"/> IL Israel..... | <input checked="" type="checkbox"/> US United States of America..... |
| <input checked="" type="checkbox"/> IN India | <input checked="" type="checkbox"/> UZ Uzbekistan..... |
| <input checked="" type="checkbox"/> IS Iceland | <input checked="" type="checkbox"/> VN Viet Nam..... |
| <input checked="" type="checkbox"/> JP Japan..... | <input checked="" type="checkbox"/> YU Yugoslavia..... |
| <input checked="" type="checkbox"/> KE Kenya | <input checked="" type="checkbox"/> ZW Zimbabwe..... |
| <input checked="" type="checkbox"/> KG Kyrgyzstan..... | |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea..... | |
| <input checked="" type="checkbox"/> KR Republic of Korea | |
| <input checked="" type="checkbox"/> KZ Kazakstan | |
| <input checked="" type="checkbox"/> LC Saint Lucia | |
| <input checked="" type="checkbox"/> LK Sri Lanka | |
| <input checked="" type="checkbox"/> LR Liberia | |

Check boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- ☒ **AE** United Arab Emirates
- ☒ **ZA** South Africa
- ☐
- ☐

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country:	regional application:* regional Office	international application: receiving Office
item (1) 02-06-1998 02 June 98	9801946-6	Sweden		
item (2)				
item (3)				

- ☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): 9801946-6
- * Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (If two or more international Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used): ISA / <i>SE</i>	Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority): Date (day/month/year): Number Country (or regional Office)
---	---

Box No. VIII CHECK LIST; LANGUAGE OF FILING

This international application contains the following number of sheets: request: 3 ✓ description (excluding sequence listing part): 5 ✓ claims: 1 ✓ abstract: 1 ✓ drawings: — sequence listing part of description: — Total number of sheets: 10 ✓	This international application is accompanied by the item(s) marked below: 1. <input type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input checked="" type="checkbox"/> other (specify): Copy of Office Action.
Figure of the drawings which should accompany the abstract: ---	Language of filing of the international application: Swedish

Box No. IX SIGNATURE OR APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

Göteborg, Sweden, June 1, 1999


Per Andersson

1. Date of actual receipt of the purported international application:	For receiving Office use only 01-06-1999	2. Drawings:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		<input type="checkbox"/> received:
4. Date of timely receipt of the required corrections under PCT-Article 11(2):		<input checked="" type="checkbox"/> not received:
5. International Searching Authority (if two or more are competent): ISA/	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid	

Date of receipt of the record copy by the International Bureau:	For International Bureau use only 21 JULY 1999	(21.07.99)
---	--	-------------------

110520 BER

1998-06-01

TITEL:

5 Torr-moppstygg

TEKNISKT OMRÅDE:

Föreliggande uppfinning avser ett mopptyg som är avsedd för applicering på ett moppstativ och som skall användas för
10 avtorkning av torra, smutsiga ytor till skillnad från vanliga mopptyg som är avsedda att doppas i ett vattentvättmedium och användas i vått skick.

TEKNIKENS STÅNDPUNKT:

15 Textilier har i alla tider använts för torkning och smutsborttagning av orena ytor. Textilierna har förekommit i olika utföranden men mest i form av vävnader. På senare tid har dessa utgjorts av fibrer av naturligt ursprung så som bomull, av konstgjorda fibrer såsom fibrer av polyamid
20 och/eller polyester eller oftast blandningar av sådana fibrer. Textilierna är oftast vävda eller stickade och det är vanligt att rengöringstygg har från en bottenväv utstående öglor av olika storlek och gjorda i olika material. Ett exempel på ett sådant tyg som är avsett att
25 fästas vid ett moppstativ och användas i vått skick beskrivs i svenska patentet 94 03398-2.

TEKNISKA PROBLEMET:

Att rengöra exempelvis ett golv med hjälp av en våt mopp
30 ger som regel ett tillfredsställande resultat vad beträffar själva renheten på golvet. På detta golv kvarstår emellertid en fuktfilm under någon tid och om man därför går på golvet strax efter våtrengöringen så kommer detta att snabbt smutsas ner igen samtidigt som man får fukt
35 under skorna och kan smutsa ner andra ytor som är rena om man beträder dessa. Dessutom har man alltid den olägenheten vid våtrengöring att en hink eller liknande måste medbringas för tvättvätskan. Själva tvättvätskan består

också av en blandning av vatten och kemiska rengöringsmedel som är kostsamma och ibland kan ge allergiska reaktioner samt oangenäm lukt. Vatten "sliter" på golvmaterialet, utlöser emissioner från materialet, tränger ned i sprickor och ojämnheter och orsakar bakterie- och sportillväxt.

Smuts emulgeras i vatten vid städning med vatten. Kvarlämnas vatten på golvet kvarligger då också smutspartiklar även sedan vattnet avdunstat. Golvet blir helt enkelt inte rent.

LÖSNINGEN:

Det har därför alltid varit ett starkt önskemål att kunna rengöra en golvyta eller liknande med så torr rengöringsmetod som möjligt och man har enligt föreliggande uppfinning åstadkommit ett torrmoppstyg för applicering på ett moppstativ och avsett att torka av torra, smutsiga ytor vilket torrmoppstyg kännetecknas av att det består av mikro- eller ultramikrofiber, eller filament med en finlek av 0,60-0,25 DTEX per fiber eller filament och är vävt eller stickat med öglor på ena eller båda sidorna av tyget med en öglehöjd på cirka 3-9 mm.

Enligt uppfinningen utgöres öglorna av polyamid- eller polyesterfiber i olika förhållanden eller en blandning av dessa fibrer i en och samma ögla.

Filamenten bör enligt uppfinningen ej ha runda tvärsnitt utan företrädesvis ha en så rektangulär form som möjligt med platta sidor.

DETALJERAD BESKRIVNING AV UPPFINNINGEN:

Torrmopptyget enligt föreliggande uppfinning är avsett att appliceras på ett moppstativ av något slag för avtorkning av smutsiga ytor. Själva moppstativet ingår inte i

upppfinningen och det kan utgöras av vilket moppstativ som helst. Det är givetvis möjligt att använda detta torrmoppstyg även utan något stativ och helt enkelt torka av torra, smutsiga ytor med tyget under användning av
5 handen. Det är även självklart att om vatten skulle förefinnas på ytan så är det fullt möjligt att med samma goda verkan använda tyget enligt upppfinningen, särskilt då tyget är starkt fuktabsorberande.

10 Tyget består av en bottenväv med utstående öglor på ena eller båda sidorna. Tyget kan vara vävt eller företrädelsevis stickat så att öglorna blir fasta och ej går att dra ut. Det material som öglorna skall bestå av utgöres av mikro- eller ultramikrofiber eller filament med
15 en finlek på 0,60-0,25 DTEX per fiber eller filament. Med måttet DTEX menas att 1 DTEX avser en fiber med en längd av 10000 meter och som väger 1 gram.

Materialet i fibrerna är enligt upppfinningen syntetiskt och
20 i öglorna kan det ingå två olika material, det vill säga ett antal av fibrerna kan exempelvis vara av polyamid medan de övriga är av polyester. Det är enligt upppfinningen också möjligt att de enskilda öglorna kan bestå av en blandning av polyamid och polyester samt även innefatta naturligt
25 förekommande fiber.

Filamentens tvärsnitt bör enligt upppfinningen ej vara runt utan ha platta sidor, helst sneda med så rektangulär form som möjligt varigenom fiberytan blir så stor som möjligt.

30

Enligt upppfinningen skall öglorna ha en höjd på minst 3 mm och högst 9 mm. Det mest fördelaktiga måttet är i trakterna av 6-8 mm. Varje ögla skall ha ett mycket stort antal fibrer. Tätheten av öglorna, det vill säga antalet öglor
35 per ytenhet och garntjockleken samt öglehöjden, skall

avstämmas så att öglorna vid tygets tryckning mot underlaget inte lägger sig ned utan förblir upprättstående eller lutar högst 45° mot en tänkt lodlinje. Den kraft som avses i detta fall är en vanlig vikt av moppstativet samt
5 någon kraft från operatören som håller i moppen och för den framåt. Denna högsta lutning innebär att den mot underlaget anliggande delen i största utsträckning utgöres av tvärliggande fibrer. Genom fibrernas läge och plattthet och täthet över hela moppytan uppkommer då en fösande effekt på
10 smutspartiklar eller andra föroreningar. Partiklarna attraheras och ackumuleras på fiberytorna samt mellan fibrerna och inne i öglorna. Den relativt höga öglehöjden med den samlade stora fiberytan bidrar till förmågan att upplagra en stor mängd smuts eller smutspartiklar.

15 Genom mikrofibrernas mycket stora mjukhet, öglelängden och ögletätheten och fibrernas finlek och ytstorlek kommer rengöringseffektiviteten att bli mycket hög. Även om fibrerna är mjuka och öglorna är långa så kommer ändå
20 öglorna att ej lägga sig ned genom att öglorna, på grund av den höga ögletätheten, kommer att stödja sig mot varandra. Då varje yta är mer eller mindre ojämn och fibrerna i mopptyget anpassar sig till underlagets ojämnheter och tränger ner i även mycket små håligheter, kan tyget
25 därifrån medföra och ackumulera också mycket små partiklar som deponeras i ojämnheterna.

Genom kombinationen av de olika parametrarna enligt föreliggande uppfinning har man således åstadkommit ett
30 torrmopptyg av mycket hög kvalitet och med mycket stor rengöringsförmåga.

Moppen med sin stora absorptionsförmåga på vätskor och partiklar skulle i princip även kunna användas för
35 upptorkning med samtidig absorption av såväl vattnet som

däri emulgerad smuts.

Uppfinningen är inte begränsad till den beskrivna
utföringsformen utan den kan varieras på olika sätt inom
5 patentkravens ram.

110520 BER

1998-05-01

PATENTKRAV:

5

1. Torrmoppstyg för applicering på ett moppstativ och
avsett att torka av torra, smutsiga ytor,
k ä n n e t e c k n a t a v,

10 att det består av mikro- eller ultramikrofiber eller
filament med en finlek på 0,60-0,25 DTEX per fiber eller
filament och är vävt eller stickat med öglor på ena eller
båda sidorna av tyget med en öglehöjd av 3-9 mm.

2. Torrmoppstyg enligt kravet 1,

15 k ä n n e t e c k n a t a v,

att öglorna utgöres a polyamid- eller polyesterfiber eller
en blandning av dessa fibrer i en och samma och ögla.

3. Torrmoppstyg enligt kravet 1 eller 2,

20 k ä n n e t e c k n a t a v,

att filamenten ej har runda tvärsnitt utan har
företrädesvis en rektangulär form med platta sidor.

110520 BER

1998-05-01

SAMMANDRAG:

- 5 Föreliggande uppfinning avser ett torrmoppstyg för applicering på ett moppstativ och det är avsett att torka av torra, smutsiga ytor. Det kännetecknas av att det består av mikro- eller ultramikrofiber eller filament med en finlek på 0,60-0,25 DTEX per fiber eller filament och är
- 10 vävt eller stickat med öglor på ena eller båda sidorna av tyget med en öglehöjd av 3-9 mm.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/00950

A. CLASSIFICATION OF SUBJECT MATTER		
IPC6: A47L 13/16, A47L 13/20 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC6: A47L		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE,DK,FI,NO classes as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
WPI		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9610946 A1 (ACTUELLE TRICOT I BORAS AB), 18 April 1996 (18.04.96), page 5, line 25 - line 34; page 6, line 12 - line 29; page 7, line 15 - line 17 --	1-3
X	DE 29706500 U1 (DICKEL, KLAUS ET AL), 31 July 1997 (31.07.97), claims 3,6 --	1-3
A	SE 431158 B (BELE RESEARCH AB), 23 January 1984 (23.01.84), claim 7 -- -----	1
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
10 Sept 1999		18-10-1999
Name and mailing address of the ISA: Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer Marianne Dickman / JA A Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

Information on patent family members

02/08/99

International application No.

PCT/SE 99/00950

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9610946 A1	18/04/96	AT 179581 T	15/05/99
		AU 3690295 A	02/05/96
		CN 1166778 A	03/12/97
		DE 69509542 D	00/00/00
		EP 0784446 A,B	23/07/97
		FI 971416 A	04/04/97
		JP 10506820 T	07/07/98
		NO 971570 A	06/06/97
		SE 503414 C	10/06/96
		SE 9403398 A	08/04/96
		US 5804274 A	08/09/98
DE 29706500 U1	31/07/97	NONE	
SE 431158 B	23/01/84	SE 8004718 A	27/12/81



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A47L 13/16, 13/20	A1	(11) International Publication Number: WO 99/62393 (43) International Publication Date: 9 December 1999 (09.12.99)
(21) International Application Number: PCT/SE99/00950 (22) International Filing Date: 1 June 1999 (01.06.99) (30) Priority Data: 9801946-6 2 June 1998 (02.06.98) SE (71) Applicant (for all designated States except US): ACT - ADVANCED CLEANING TECHNIKS AB [SE/SE]; P.O. Box 10, S-515 21 Viskafors (SE). (72) Inventor; and (75) Inventor/Applicant (for US only): NORDIN, Rudolf [SE/SE]; Hyggesgatan 7, S-502 57 Borås (SE). (74) Agents: ANDERSSON, Per et al.; Albihs Patentbyrå Göteborg AB, P.O. Box 142, S-401 22 Göteborg (SE).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i> <i>In English translation (filed in Swedish).</i>
(54) Title: CLOTH FOR A DRY MOP (57) Abstract The invention being presented concerns a dry-mop fabric for attachment to a mop handle. It is designed to clean dry, soiled surfaces. It is distinguished by consisting of micro- or ultramicro-fibre or filament with a count of 0.60-0.25 dtex per fibre or filament and by being woven or knitted with loops on one or both sides of the fabric, with a loop height of 3-9 mm.		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

5

CLOTH FOR A DRY MOP.

10

TECHNICAL FIELD:

The present invention concerns a mop fabric that is designed for attachment to a mop handle and to be used to clean dry, soiled surfaces, in contrast to regular mop fabric, which is designed for immersion in a water-based washing medium and is used wet.

BACKGROUND:

Textiles have always been used for cleaning and removing dirt from soiled surfaces. These textiles have been available in various qualities, but mostly in the form of weaves. In recent times, they have consisted of fibres of natural origin such as cotton, artificial fibres such as polyamide and/or polyester, or most commonly blends of such fibres. These textiles are most often woven or knitted. It is usual for cleaning fabrics to have different-sized loops, made from various materials, which protrude from the ground fabric. An example of the type of fabric that is designed to be attached to a mop handle and used wet is described in Swedish patent no. 94 03398-2.

THE TECHNICAL PROBLEM:

As a rule, satisfactory results are obtained with regard to the actual cleanliness of a floor when a wet mop is used to clean it. However, a film of moisture remains on the floor for some time and if anyone walks on the floor

5 soon after it has been cleaned, it will quickly become
soiled again. At the same time, the moisture adheres to
the soles of the shoes and could soil other, clean
surfaces if they are trodden on. In addition, there is
always the inconvenience of having to use a bucket or
10 similar container in which to carry the washing liquid
when the wet-cleaning method is used. The washing liquid
also consists of a mixture of water and chemical
detergent, which are costly and can sometimes cause
allergic reactions as well as an unpleasant odour. Water
15 "wears out" the floor material, triggers emissions from
the material, seeps into cracks and uneven surfaces and
causes the growth of bacteria and mildew.

Dirt emulsifies in water that is used for cleaning. If
20 any of this water is left on the floor, the dirt
particles will remain behind once the water has
evaporated. Quite simply, the floor will not be clean.

THE SOLUTION:

25 There has therefore always been a strong desire to be
able to clean a floor or similar surface by using as dry
a cleaning method as possible. As per the invention
being presented, a dry-mop fabric has now been produced
for attachment to a mop handle and to be used to clean
30 dry, soiled surfaces. This dry-mop fabric is
distinguished by it consisting of micro- or ultramicro-
fibre or filament with a count of 0.60-0.25 DTEX per
fibre or filament and by it being woven or knitted with
loops on one or both sides of the fabric, with a loop
35 height of approximately 3-9 mm.

5 As per the invention, the loops are made of polyamide or polyester fibre in various proportions, or a blend of these fibres in one and the same loop.

As per the invention, the cross-section of the filament should not be round, but preferably have as rectangular
10 a shape as possible, with flat sides.

DETAILED DESCRIPTION OF THE INVENTION:

The dry-mop fabric, as per the invention being presented, is designed for attachment to any mop handle
15 and to be used to clean soiled surfaces. The mop handle is not included in the invention; any mop handle can be used. It is of course also possible to use this dry-mop fabric without a handle by simply using the fabric on its own to clean dry, soiled surfaces by hand. If there
20 is any water on the surface, it is naturally also possible to use the fabric, as per the invention, to the same good effect - especially since the fabric is extremely absorbent.

25 The fabric consists of a ground fabric with protruding loops on one or both sides. The fabric can be woven or preferably knitted, so that the loops are firm and cannot be pulled out. The material comprising the loops should consist of micro- or ultramicro-fibre or filament
30 with a count of 0.60-0.25 DTEX per fibre or filament. Dtex is a unit of measurement, where 1 DTEX represents one fibre with a length of 1 000 metres and a weight of 1 gram.

35 As per the invention, the material in the fibres is synthetic and the loops may consist of two different materials, i.e. a number of the fibres could be

5 polyamide, while the remainder could be polyester, for instance. As per the invention, it is also possible that the individual loops could consist of a blend of polyamide and polyester as well as contain natural fibres.

10

As per the invention, the cross-section of the filaments should not be round, but have flat sides, preferably slanting and with as rectangular a shape as possible, whereby the fibre surface will be as large as possible.

15

As per the invention, the loops should be at least 3 mm and no more than 9 mm in height. The most advantageous measurement is in the region of 6-8 mm. Each loop must consist of a large number of fibres. The closeness of
20 the loops, i.e. the number of loops per unit of area, the yarn thickness and the loop height must be proportioned so that when the fabric is pressed against a surface underneath it the loops remain upright or lie at an angle of no more than 45° to an imaginary vertical
25 line. The force indicated in this instance is the normal weight of the mop handle plus some strength exerted by the operator, who holds the mop and moves it forwards. This maximum angle means that the part which is in contact with the surface underneath largely consists of
30 transverse fibres. Because of the position, flatness and closeness of the fibres across the entire surface of the mop, a propulsive effect on the dirt particles or other impurities arises. The particles are attracted to and accumulate on the fibre surfaces, as well as between the
35 fibres and inside the loops. The relatively high loop height combined with the collectively large fibre

5 surface contributes to its ability to accumulate a large quantity of grime or dirt particles.

The cleaning action is highly effective because of the microfibres' extreme softness, the length and closeness
10 of the loops and the count and surface dimensions of the fibres. Even though the fibres are soft and the loops are long, the loops will still not be flattened because they support each other owing to their closeness. Since every surface is more or less uneven and the fibres in
15 the mop fabric adapt to the unevenness of the surface underneath and force their way into even extremely small hollows, the fabric can also remove and accumulate the very small particles that are deposited in these uneven areas.

20

By combining the various parameters as per the invention being presented, an extremely high-quality dry-mop fabric with extensive cleaning ability has been produced.

25

Because of its great ability to absorb liquids and particles it should, in principle, also be possible to use the mop for drying up liquid, with simultaneous absorption of both the water and any emulsified dirt
30 contained in it.

The invention is not limited to the design described, but can be varied in different ways within the scope of the patent claims.

35

5

10 PATENT CLAIMS:

1. Dry-mop fabric for attachment to a mop handle and designed to clean dry, soiled surfaces, characterized in it consisting of micro- or ultramicro-
15 fibre or filament with a count of 0.60-0.25 DTEX per fibre or filament and by it being woven or knitted with loops on one or both sides of the fabric, with a loop height of 3-9 mm.
- 20 2. Dry-mop fabric according to patent claim 1, characterized in the loops being made of polyamide or polyester fibre or a blend of these fibres in one and the same loop.
- 25 3. Dry-mop fabric as per patent claim 1 or 2, characterized in the cross-section of the filament not being round, but preferably having a rectangular shape with flat sides.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/00950

A. CLASSIFICATION OF SUBJECT MATTER		
IPC6: A47L 13/16, A47L 13/20 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC6: A47L		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE,DK,FI,NO classes as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
WPI		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9610946 A1 (ACTUELLE TRICOT I BORAS AB), 18 April 1996 (18.04.96), page 5, line 25 - line 34; page 6, line 12 - line 29; page 7, line 15 - line 17 --	1-3
X	DE 29706500 U1 (DICKEL, KLAUS ET AL), 31 July 1997 (31.07.97), claims 3,6 --	1-3
A	SE 431158 B (BELE RESEARCH AB), 23 January 1984 (23.01.84), claim 7 -- -----	1
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
10 Sept 1999		18 -10- 1999
Name and mailing address of the ISA. Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer Marianne Dickman / JA A Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT
Information on patent family members

02/08/99

International application No.
PCT/SE 99/00950

Patent document cited in search report	Publication date	Patent family member(s)	Publicaauon date
WO 9610946 A1	18/04/96	AT 179581 T	15/05/99
		AU 3690295 A	02/05/96
		CN 1166778 A	03/12/97
		DE 69509542 D	00/00/00
		EP 0784446 A,B	23/07/97
		FI 971416 A	04/04/97
		JP 10506820 T	07/07/98
		NO 971570 A	06/06/97
		SE 503414 C	10/06/96
		SE 9403398 A	08/04/96
		US 5804274 A	08/09/98

DE 29706500 U1	31/07/97	NONE	

SE 431158 B	23/01/84	SE 8004718 A	27/12/81
